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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,952	12/11/2003	Zhaoqing Chen	ROC920030299US1	9272

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EXAMINER

PALADINI, ALBERT WILLIAM

ART UNIT PAPER NUMBER

2125

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/732,952	CHEN ET AL.	
	Examiner	Art Unit	
	Albert W. Paladini	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification states on lines 4-5 of page 11 "The input information specifies the control file 172, which identifies the input model 170 to be characterized." However, it does not explain what constitutes the input model. Then, lines 24-25 on state "Control then continues to block 240 where the controller 176 compares the behavioral models 174 to the input model 170 via simulation." A behavioral model normally mimics external logical and timing behavior. In order to understand the comparison between the input model 170 and the behavioral model 174, it is necessary to explain the elements of the input model.

Appropriate correction and clarification are required.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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4. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1

The first step is "characterizing an I/O model". This would appear to entail measuring or determining the characteristics of an I/O model. The next step is "creating a set of behavioral models based on the characterizing". If the behavioral models are based upon characterization of the initial model from the first step, then there should be no difference between the I/O model and the set of behavioral models. Then the last step of "comparing the set of behavioral models to the I/O model" would yield no difference, making the step unnecessary.

Claim 6

The second means is for "characterizing an I/O model". This would appear to entail measuring or determining the characteristics of an I/O model. The next means is for "creating a set of behavioral models based on the characterizing". If the behavioral models are based upon characterization of the initial model from the first step, then there should be no difference between the I/O model and the set of behavioral models. Then the last means for "comparing the set of behavioral models to the I/O model" would yield no difference, making the means unnecessary.

Claim 11

The second step is “characterizing an I/O model”. This would appear to entail measuring or determining the characteristics of an I/O model. The next step is “creating a set of behavioral models based on the characterizing”. If the behavioral models are based upon characterization of the initial model from the first step, then there should be no difference between the I/O model and the set of behavioral models. Then the last step of “comparing the set of behavioral models to the I/O model” would yield no difference, making the step unnecessary.

Claim 16

Line 7 recites, “characterizing an I/O model”. This would appear to entail measuring or determining the characteristics of an I/O model. Line 8 recites, “creating a set of behavioral models based on the characterizing”. If the behavioral models are based upon characterization of the initial model from the first step, then there should be no difference between the I/O model and the set of behavioral models. Then lines 9-10, which recite, “comparing the set of behavioral models to the I/O model” would yield no difference, making the comparison unnecessary.

Appropriate correction and clarification are necessary.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Moriyasu (5349539).

Considering those claim limitations, which were understood in light of the 35 USC 112 rejections, provided in paragraphs 1-4, makes this rejection.

Referring to figure 1, Moriyasu discloses a behavior p[parameter extractor 106, which characterizes an I/O model. This parameter extractor 106 provides an input to behavioral simulator 107 to create behavioral models. The comparison of the behavioral simulator is compared to the behavior of the I/O characteristics of the device.

7. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kelsey (5452227).

Considering those claim limitations, which were understood in light of the 35 USC 112 rejections, provided in paragraphs 1-4, makes this rejection.

In (C9, L10-27), Kelsey discloses a method whereby a hierarchical behavioral model is created using a programmable device specification. It is inherent that the programmable device specification is obtained by characterizing a device model. In lines 25-27, Kelsey compares the behavioral model to the device model. Kelsey explains in (C3, L45-65) that the device models include the input/ output model.

8. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Rostoker (5933356).

Considering those claim limitations, which were understood in light of the 35 USC 112 rejections, provided in paragraphs 1-4, makes this rejection.

In (C12, L55-62), Rostoker discloses creation of a gate level model 202 and then characterizing an I/O model (C13, L1-8). Then in (C13, L40-47), Rostoker compares the behavioral model to the I/O model. This process is explained in (C9, L51-55), where Rostoker states "Next in a 'physical simulation' step, the gate-level design description is simulated, comparing the results with those from the initial behavioral simulation. This provides a check that the circuit implementation behaves as intended and that the timing goals are achieved."

9. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Jain (6044211).

Considering those claim limitations, which were understood in light of the 35 USC 112 rejections, provided in paragraphs 1-4, makes this rejection.

Referring to figure 14, in (C20, L34-52), Jain discloses verification of a behavioral model by comparing simulator output 142 with an expected output 143 at an output node of the physical device. The behavioral characterization is obtained by applying input sequence 140 to an array of data values from user defined behavioral netlist 138.

Relevant Prior Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Burroughs (5404496) discloses a computer-based system, which utilizes a synchronizer to analyze the differences between a behavioral model and an architectural model in computer architecture.

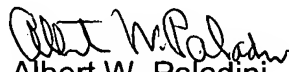
Glasser (6697980) discloses a method of fault testing a die using a set of logical gates, where a tester drive input vectors on the input die pads, and the vectors on the output pads are compared with a behavioral model, RTL model, gate level model, or transistor circuit level model.

11. Any inquiry concerning this communication or earlier communication from the examiner should be direct to Albert W. Paladini whose telephone number is (571) 272-3748. The examiner can normally be reached from 7:00 to 3:00 PM on Monday, Tuesday, Thursday, and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Leo P. Picard, can be reached on (571) 272-3749. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

July 31, 2006


Albert W. Paladini
Primary Examiner
Art Unit 2125